

Topic: Microtoxicology

Cultivation experiments with stepwise varied concentrations of effectors are required for the determination of dose-response relations in toxicology. The micro segmented-flow technique allows a fast and very efficient generation of large series of samples with exactly defined compositions of cells and substances. A total test volume of 0.2 mL is sufficient for generation of a microtoxicological screening with 800 separated single test samples which contain 250 nL each, for example. This can be applied, for example, for:

- statistically focused investigations including block series containing 40 samples for 20 different concentrations (concentration step: 5%),
- ultra high resolved dose-response functions (800 concentration steps of 0.125 %),
- two-dimensional screenings (2 effectors with following concentrations steps(5 % and 2.5 % or 12.5 % and 1 %),
- three-dimensional screenings (3 effectors with 5 % concentration steps for each).

The applicability of micro segmented-flow for microtoxicology was demonstrated, for example, on:

- E. Coli,
- yeast,
- Chlorella vulgaris,
- zebra fish embryos.

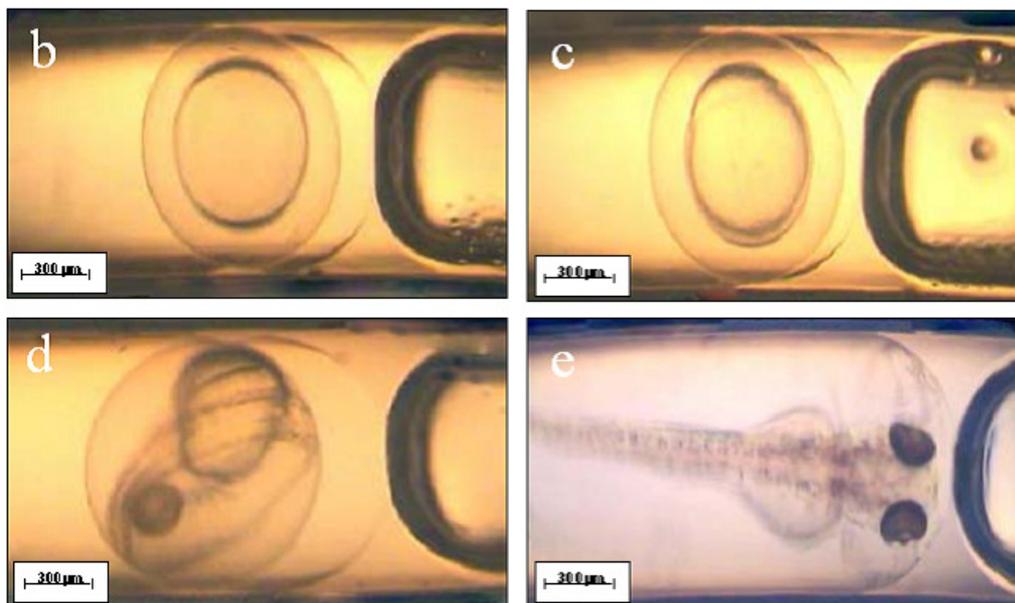


Figure: time series of zebra fish development in microsegments

Source/Author/Date:

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